

REMARKS

Claims 21 to 23, 25 to 26, 28 to 31 and 34 to 42 are now pending in the present application. Claims 21 and 30 have been amended. Applicants respectfully submit that the pending claims are patentable for the following reasons.

I. Rejection of Claims 21 to 23, 25, 26, 29, 30, 37 and 40

Claims 21 to 23, 25, 26, 29, 30, 37 and 40 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over United States Patent No. 6,051,503 ("Bhardwaj et al.") in view of United States Patent No. 6,277,173 ("Sadakata et al."), United States Patent No. 5,310,426 ("Mori") and Applicants' allegedly admitted prior art (AAPA). It is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori and the AAPA does not render these claims unpatentable for the following reasons.

Regarding Claim 21, although Applicants do not necessarily agree with the merits of the rejection, to facilitate matters, this claim has been amended without prejudice to recite that **during the etching steps, the buffer tank is filled with passivation gas, and during the passivation steps, the buffer tank is emptied and the passivation gas formerly in the buffer tank flows into the etching chamber.** Support for this amendment may be found, for example, from page 9, line 32 to page 10, line 9 of the Specification.

Neither Bhardwaj et al., nor Sadakata et al., nor Mori discloses or suggests the above-mentioned feature. On page 5, lines 6 to 7, the Final Office Action admits that Bhardwaj et al. is silent about the use of a buffer tank located along a passivation gas line. Sadakata et al., in turn, shows a buffer tank (26) used in an apparatus for manufacturing semiconductor devices (see Fig. 2). However, on page 5, lines 15 to 17, the Final Office Action admits that Sadakata et al. does not explicitly demonstrate that a process gas to an etching chamber passes through a passivation gas line and a buffer tank. Mori, in turn, describes an apparatus for forming a thin film on a substrate, using microwave plasma chemical vapor deposition. In addition, as is apparent from Figures 3 and 4 and column 6, line 39 to column 7, line 47, the apparatus of Mori includes a reaction chamber (1) that is connected to a buffer tank (37) via an exhaust pipe (10) and a needle valve (36) or a vacuum

tank (35). However, the buffer tank (37) of Mori is not filled with a reactant gas and then subsequently emptied so as to inject the reactant gas into reaction chamber (1). As is clear from the arrows present in Figures 3 and 4 of Mori, the contents of buffer tank (37) are not injected into reaction chamber (1). Instead, as is apparent from column 7, lines 14 to 47, the buffer tank (37) is used to stabilize pulsations in the flow of exhaust gas caused by rotary pump (39), as well as to dilute exhaust gas from the reaction chamber (1), using purging gas from a purging gas bomb (41), before the exhaust gas is exhausted by rotary pump (39) or treated in a bubbling tank (44) prior to being exhausted. Furthermore, the AAPA does not cure the deficiencies of Bhardwaj et al., Sadakata et al., and Mori with respect to at least the above-mentioned feature of claim 21. Accordingly, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori and the AAPA does not render claim 21 unpatentable for at least these reasons.

Claim 30 includes features analogous to claim 21 and has been amended in a manner analogous to claim 21. Accordingly, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori and the AAPA does not render claim 30 unpatentable for at least the reasons set forth above.

As for claims 22, 23, 25, 26 and 29 and claims 37 and 40, which respectively depend from, and therefore include all of the features of, claims 21 and 30, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori and the AAPA does not render these dependent claims unpatentable for at least the reasons set forth above.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

II. Rejection of Claim 28

Claim 28 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bhardwaj et al. in view of Sadakata et al., Mori, the AAPA and U.S. Patent Application Publication No. 2003/0059720 ("Hwang et al."). It is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Hwang et al. does not render this claim unpatentable for the following reasons.

Claim 28 ultimately depends from claim 21 and therefore includes all of the features recited in claim 21. In addition, Hwang et al. does not disclose or suggest all of the features of claim 21 not disclosed or suggested by Bhardwaj et al., Sadakata et al., Mori and the AAPA. Therefore, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Hwang et al. does not render this dependent claim unpatentable for at least these reasons and the reasons more fully set forth above in support of the patentability of claim 21.

In view of all of the above, withdrawal of this rejection is respectfully requested.

III. Rejection of Claims 34 to 36 and 41 to 42

Claims 34 to 36 and 41 to 42 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bhardwaj et al. in view of Sadakata et al., Mori, the AAPA and United States Patent No. 6,846,745 ("Papasouliotis et al."). It is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Papasouliotis et al. does not render these claims unpatentable for the following reasons.

Claims 34 to 36 and 42 and claim 41 respectively depend from, and therefore include all of the features recited in, claims 30 and 21. In addition, Papasouliotis et al. does not disclose or suggest all of the features of claims 21 and 30 not disclosed or suggested by Bhardwaj et al., Sadakata et al., Mori and the AAPA. Therefore, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Papasouliotis et al. does not render these dependent claims unpatentable for at least these reasons and the reasons more fully set forth above in support of the patentability of claims 21 and 30.

In view of all of the above, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 38 and 39

Claims 38 and 39 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bhardwaj et al. in view of Sadakata et al., Mori, the AAPA and United States Patent No. 5,683,548 ("Hartig et al."). It is

respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Hartig et al. does not render these claims unpatentable for the following reasons.

Claims 38 and 39 depend from claim 30 and therefore include all of the features recited in claim 30. In addition, Hartig et al. does not disclose or suggest all of the features of claim 30 not disclosed or suggested by Bhardwaj et al., Sadakata et al., Mori and the AAPA. Therefore, it is respectfully submitted that the combination of Bhardwaj et al., Sadakata et al., Mori, the AAPA and Hartig et al. does not render these dependent claims unpatentable for at least these reasons and the reasons more fully set forth above in support of the patentability of claim 30.

In view of all of the above, withdrawal of this rejection is respectfully requested.

V. Conclusion

In view of the foregoing, it is respectfully submitted that all pending claims of the present application are now in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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